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EXAMINER

BAREFORD, KATHERINE A

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/614,652

Applicant(s)

CINTRA ET AL.

Examiner

Katherine A. Bareford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21 and 51-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

claims 1-15 and 22-50 are canceled

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed November 26, 2004 has been received and entered.

Claims 1-15 and 22-50 have been canceled, leaving claims 16-21 and 51-64 present for examination.

Specification

2. The title of the invention is now descriptive after the amendment of Nov. 26, 2004.
3. The objection to the disclosure because of informalities at to the description of the figures at pages 3-4 is withdrawn due to the amendments of Nov. 26, 2004.
4. The attempt to incorporate subject matter into this application by reference to 09/280,367 (page 8, 2nd paragraph) and 09/358,578 (page 9, 2nd full paragraph) is now proper because applicant has indicated that the references are published or commonly assigned, and it has been indicated that 09/280,367 is now abandoned and 09/358,578 is now U.S. Patent No. 6,342,317.

Claim Objections

5. The objection to claims 16, 17, 22 and 54 because of informalities is withdrawn due to the amendments of Nov. 26, 2004.

6. Claim 63 is objected to because of the following informalities: in claim 63, it should be clarified that the “vibratory nebulizer” provides the spray. As “a vibratory nebulizer” has been provided in parent claim 16, it should be indicated that the same nebulizer is in claim 63 by using “the vibratory nebulizer” in claim 63 rather than “a vibratory nebulizer”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 16-19, 51-56 and 59-64 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for spraying an electrolyte/separator material on an inside surface of a battery separator/cathode which has already been placed in a battery can, does not reasonably provide enablement for the other methods claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The only invention described in the specification is the spraying of an electrolyte/separator material on an inside surface of a battery separator/cathode which has already been placed in a battery can. Applicant has provided not teachings or suggestions as to how the other inventions claimed could be practiced without undue experimentation by one of ordinary skill in the art. For example, it is unclear if the spraying of claim 16 would work if it was not applied to a specific

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substrate or in the confines of the battery can, without performing undue experimentation by testing all possible surfaces or application methods.

VB In the amendment of Nov. 26, 2004, applicant amended the independent claim 16 to provide that "the electrolyte is applied to a surface in a battery container". However, applicant has not required ^{that} the surface to which the electrolyte is applied is a separator or cathode, and thus another surface could be used, and the above rejection is maintained.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 20-21 and 59-62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20, line 2, the claim requires providing the separator in "a battery can" prior to said applying. It is unclear from the claim as worded whether the "battery can" is the same as the "battery container" for claim 16. If it is, then it is unclear how the claim is limiting. If it is not, then it should be clarified how the battery container is related to the battery can.

Claim 58, line 2, the claim requires providing the cathod in "a can" prior to said applying. It is unclear from the claim as worded whether the "can" is the same as the "battery container" for claim 16. If it is, then it is unclear how the claim is limiting. If it is not, then it should be clarified how the battery container is related to the can.

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Claim 59, line 2, "a container" is referred to. It is unclear from the claim as worded whether the "a container" is the same as the "battery container" for claim 16. If it is, then the claim should be clarified to read "the container". If it is not, then it should be clarified how the battery container is related to the second container.

The other dependent claims do not cure the defects of the claims from which they depend.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 16-19 and 53-63 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 5-6, 8-10 and 14-18 of U.S. Patent No. 6,589,612 ('612). Although the conflicting claims are not identical, they are not patentably distinct from each other because '612 provides claims that meet all the feature requirements of the claims of the present application, and also require other features not

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prevented by the claims of the present application. For example, claims 6 and 8 of '612 provides all features required by claim 16 of the present application.

13. In the amendment of Nov. 26, 2004, applicant stated that they "do not necessarily agree with this rejection, but to obviate the rejection, Applicants may file a terminal disclaimer upon indication that the claims are otherwise allowable." As applicant has provided no argument to overcome the rejection, the obvious double patenting rejection is maintained.

Claim Rejections - 35 USC § 102

14. The rejection of claims 16 and 19 under 35 U.S.C. 102(b) as being anticipated by Japan 1-159964 (hereinafter '964) is withdrawn due to the amendments of Nov. 26, 2004 to require the vibratory nebulizer spray and the application to a surface in a battery container.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. The rejection of claims 17, 22 and 51 under 35 U.S.C. 103(a) as being unpatentable over '964 as applied to claims 16 and 19 above, and further in view of Hope et al (US 4888206) is withdrawn due to the amendments of Nov. 26, 2004 to require the vibratory nebulizer spray and the application to a surface in a battery container.

18. The rejection of claims 18 and 52 under 35 U.S.C. 103(a) as being unpatentable over '964 in view of Hope as applied to claims 17, 22 and 51 above, and further in view of Sono-Tek Technology Overview is withdrawn due to the amendments of Nov. 26, 2004 to require the vibratory nebulizer spray and the application to a surface in a battery container.

19. Claims 16, 17, 19-21, 51, 53, 55 and 57-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reichert et al (US 6203941) in view of the admitted state of the prior art, Japan 1-159964 (hereinafter '964) and Hope et al (US 4888206).

Reichert teaches a method for applying a material (a separator) in the manufacture of a battery. Column 2, line 45, through column 3, line 20. The material can be applied as a spray. Column 4, lines 15-25. The material can be a film forming separator material. Column 4, lines 20-40. A cathode can be provided. Column 3, lines 1-5 and column 4, lines 15-25. The film forming material is applied to at least a portion of the cathode. Column 3, lines 1-5 and column

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4, lines 15-25. The cathode is placed in a battery can prior to applying the film forming material. Column 3, lines 1-5 and column 4, lines 15-25. The spray can be provided by inverted can spray coating, wherein the coating composition is sprayed vertically upwardly in to an inverted battery can containing a cathode. Column 3, lines 1-5. The system can have at least two components. Column 6, lines 45-60 (for example) and also column 7, lines 5-20. These components can be applied simultaneously as a spray. Column 4, lines 15-25. The components are separate to the extent that the two components are two different materials before they are combined to form the "simultaneous" spray. The surface can be an elongated cavity in the container. Figures 1-3 and column 3, lines 20-30. The surface can be cylindrical. Column 2, lines 50-55 and figures 1-3. The surface can be non-cylindrical. Column 2, lines 50-60.

Reichert teaches all the features of these claims except (1) the spraying of the electrolyte on the separator, (2) the avoiding of the pooling (claim 21), (3) applying a film forming material with the electrolyte (claim 53), (4) the sequential application (claim 55), (5) the electrolyte on the cathode (claim 57), (6) the undulating lobe (claim 62), (7) rotating the container during application of electrolyte (claim 64), (8) the use of the vibratory nebulizer (claims 16, 63) and (9) the droplet size (claims 17,51).

However, the admitted state of the prior art, at page 1 of the specification, teaches that in the manufacture of batteries it is common to start with a cylindrical can to which is first added a pelletized cathode material in the shape of an annulus. A separator is then placed against the surface of the cathode inside the annulus. The separator made by a preformed cylindrical sheet or may be a material that is applied as a liquid and then forms a stable film. A small precharge of

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electrolyte is then added to wet the separator. The precharge is poured in the annular opening defined by the separator and forms a small pool at the bottom of the can from which it wicks into the separator after a period of time.

'964 teaches a method for applying electrolyte in the manufacture of a battery, where the electrolyte is applied to a separator in the form of a spray. See the abstract.

Hope teaches a method for applying a material to a substrate in a process of manufacturing a battery. Column 1, lines 5-20 and column 2, lines 15-25. The material is applied to the substrate in the form of a spray generated by a vibratory nebulizer. Column 5, lines 45-68 and column 2, lines 15-25. Hope teaches that the droplet size is less than 20 microns. Column 6, lines 5-15.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reichert to spray apply electrolyte to the separator on a cathode in the battery can as suggested by the admitted state of the prior art and '964 in order to provide a desirable electrolyte application, because Reichert teaches a desirable method of manufacturing a battery includes spray application of a multicomponent separator onto a cathode in a battery can, and the admitted state of the prior art further teaches that it is need to provide an electrolyte material to wet this separator and '964 teaches that a desirable method of applying electrolyte to a separator is by spraying. Given the teaching of Reichart of applying the separator material by spraying, it would be desirable to continue this spray application by applying the electrolyte sequentially on the separator. It would further have been obvious to provide the spraying of the electrolyte using the inverted can position of Reichert with an expectation of desirable coating results, which would

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also prevent pooling of the spray in the bottom of the can, since this spray method is suggested as desirable positioning by Reichert. It would further have been obvious to use an undulating lobe surface in the battery container with an expectation of desirable coating results, because Reicher teaches that non-cylindrical shaped batteries can be coated (column 2, lines 50-60) and it is the Examiner's position that undulating shaped cathode surfaces are well known in the battery art. It would further have been obvious to rotate the surface while spraying so as to fully coat all surfaces, since it is the Examiner's position that it is well known when spraying interior surfaces to rotate the surface while spraying to fully cover all areas. It would further have been obvious to modify Reichert in view of the admitted state of the prior art and '964 to use a vibratory nebulizer as described by Hope in order to provide the spray with an expectation of desirable coating results, because both Reichert in view of the admitted state of the prior art and '964 and Hope teach spraying material for battery purposes and Hope teaches that a desirable method of forming fine spray drops is a vibratory nebulizer. This vibratory spray method would provide the droplet size of less than 20 microns.

20. Claims 18 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reichert in view of the admitted state of the prior art, '964 and Hope as applied to claims 16, 17, 19-21, 51, 53, 55 and 57-64 above, and further in view of Sono-Tek Technology Overview.

Reichert in view of the admitted state of the prior art, '964 and Hope teaches all the features of these claims except the spray velocity

However, Sono-Tek teaches that when using ultrasonic atomizing nozzles, a low velocity spray of 3-5 inches/second can be provided. Page 1.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reichert in view of the admitted state of the prior art, '964 and Hope to use a low velocity flow as described by Sono-Tek with an expectation of desirable coating results, because both Reichert in view of the admitted state of the prior art, '964 and Hope and Sono-Tek teach spraying material with nebulizers and Sono-Tek teaches a conventional desirable spray velocity when using nebulizers.

21. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reichert in view of the admitted state of the prior art, '964 and Hope as applied to claims 16, 17, 19-21, 51, 53, 55 and 57-64 above, and further in view of EP 898 316 A1 (hereinafter '316).

Reichert in view of the admitted state of the prior art, '964 and Hope teaches all the features of this claim except the use of PVA.

However, '316 teaches the formation of separators for batteries. Page 4, lines 50-55. The separator comprises a porous base, such as a porous film, and an organometallic compound applied to the base. Page 4, lines 50-55. The porous film can include PVA, polyvinyl alcohol. Page 6, lines 35-45. The PVA can be applied by spray coating or the like to the porous base. Page 9, lines 35-55. Sequentially the organometallic compound can be applied by spraying to form the separator. Page 11, lines 40-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Reichert in view of the admitted state of the prior art, '964 and Hope to use PVA as a separator component as described by '316 with an expectation of desirable coating results, because both Reichert in view of the admitted state of the prior art, '964 and Hope teach separators for battery purposes and '316 teaches that a desirable material in separators is PVA.

Response to Arguments

22. Applicant's arguments filed Nov. 26, 2004 have been fully considered but they are not persuasive.

Applicant's Arguments

As to the rejection of claims using the combination of Reichert, the admitted state of the prior art, and Hope, applicant argues that '964 is directed to applying electrolyte to a plate or separator of a fuel cell, not to a surface in a battery container, as '964 has nothing to do with batteries. Applicant argues that Hope is directed to coating a flat substrate for batteries, but does not indicate that the electrolyte is applied by spraying. Hope also does not disclose or suggest applying a battery material in a battery container. Reichert does disclose applying a battery material as a spray in a battery container, but the material is a separator material, not an electrolyte. As to the admitted state of the prior art, application argues that while it does disclose that an electrolyte can be applied to a surface in a battery container, there is no suggestion that the electrolyte is in the form of a spray. Thus, according to applicant, one of ordinary skill in the art would not have looked to '964 as it is not concerned with batteries. Applicant further argues

that while the Examiner reasoned that since Reichert describes spraying a separator material, then it would be desirable to continue the spray application by applying an electrolyte with the separator since the electrolyte is to be impregnated into the separator anyway, this conclusory assertion has no support in the record, since there is no indication that spraying an electrolyte with the separator would work. Applicant further states that they do not concede to the positions that the Examiner asserted were well known.

The Examiner's Response

The Examiner has reviewed the above arguments, however, the claim rejections above are maintained. As to the combination of the references, applicant appears to be arguing that the only suggestion of applying the electrolyte in the form of a spray comes from '964, which applicant argues is essentially non-analogous art as it is not concerned with batteries. In response to applicant's argument that '964 is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, at the very least is reasonably pertinent to the particular problem with which applicant was concerned, the application of electrolyte materials. '964 teaches the spray application of electrolyte material to a separator substrate to impregnate the separator. '964 teaches that this helps "battery" output characteristics. Thus, at the least '964 indicates that electrolyte can be sprayed to a separator substrate and the resulting product will have battery output. To one of ordinary skill in the art this would indicate that the article produced would

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have battery characteristics and be related to batteries. Furthermore, as indicated by the admitted state of the prior art, it is well known that when making batteries in containers, a separator and cathode are provided in the container, and a liquid electrolyte material is then added to wet the separator. Thus, it is suggested that when making a battery by the method suggested by Reichert, where a separator is sprayed inside a battery container, it would have been obvious to further spray the electrolyte onto the separator, given the teaching of '964 as to knowledge of spraying of an electrolyte, Hope as to the vibratory nebulizer spraying of liquid battery materials and the admitted state of the prior art as to the knowledge of applying a liquid electrolyte to a separator in a battery container when making batteries, for the reasons discussed in the rejection of claim 16 above. As to the argument that there is no suggestion of applying the electrolyte with the separator, the 35 USC 103 rejection of claim 56 as to the simultaneous application of electrolyte and separator ^{has been} ~~is~~ withdrawn. However, the suggestion would clearly be there for sequential application, because the prior art clearly indicates that the separator is formed and then impregnated with electrolyte. As to applicant's statement that they do not concede to the positions that the Examiner asserted were well known, the Examiner notes that MPEP 2144.03 C. indicates that to adequately traverse a finding by the Examiner of what is well known in the art, "an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art." Here, the applicant has not pointed out any reasons as to why the noticed fact is not considered to be common knowledge or well-known in the art and, in fact, does not actually indicate that he disagrees with the Examiner, merely that the positions are not "conceded". ^{As} ~~As~~ a

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result, the Examiner takes the position that the statements of well known in the art is taken to be admitted prior art (see MPEP 2144.03 C.).

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:30-4:00) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KATHERINE BAREFORD
PRIMARY EXAMINER